JC20 Rec'd PCT/PTO 2 9 MAR 2002

ORM PTO-1390 US DEPART	MENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER P/1228-149	
TRANSMITTAL LETTER			
DESIGNATED/ELECT	US APPLICATIONS (1000 8 9 6 3 8		
	IG UNDER 35 U.S.C. 371	-	
INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED	
PCT/SE00/01849	25 September 2000 VEHICLE WITH A FRONT-	29 September 1999	
TITLE OF INVENTION MOTOR AN	VEHICLE WITH A FRONT- D AIR GUIDE CHASSIS	MODRIED ENGINE	
APPLICANT(S) FOR DO/EO/US	Michael LINDEN et al		
Applicant herewith submits to the United State	s Designated/Elected Office (DO/EO/US) the follo	owing items and other information:	
1. X This is a FIRST submission of item	as concerning a filing under 35 U S C. 371.		
2. This is a SECOND or SUBSEQUE	NT submission of items concerning a filing under	r 35 U.S.C. 371.	
	tly begin national examination procedures (35 U.S		
	iration of 19 months from the priority date (PCT	Article 31).	
5. X A copy of the International App	olication as filed (35 U.S.C. 371(c)(2))	esional Burnau)	
	nired only if not communicated by the Internated by the International Bureau.	ationai Burcau).	
b. A has been communicate c. I s not required, as the	ed by the International Bureau. application was filed in the United States Rec	eiving Office (RO/US).	
6. An English language translation	of the International Application as filed (35	U.S.C. 371(c)(2)).	
7. X Amendments to the claims of the	he International Application under PCT Artic	le 19 (35 U.S.C. 371(c)(3))	
	quired only if not communicated by the Inter	national Bureau).	
b. have been communica	ted by the International Bureau.	descents has NOT against	
	lowever, the time limit for making such amen	uments has NO1 expired.	
d. X have not been made as	nd will not be made.	F Article 19 (35 U.S.C. 371(c)(3)).	
	of the amendments to the claims under PC	1 Fallole 19 (33 0.0.0. 37 1(0)(3)).	
	nventor(s) (35 U.S.C. 371(c)(4)).		
10. An English language translation PCT Article 36 (35 U.S.C. 371	n of the annexes to the International Prelimin $(c)(5)$).	ary examination report under	
Items 11 to 16 below concern docume			
	tement under 37 CFR 1.97 and 1.98.		
12. X An assignment document for r	ecording. A separate cover sheet in complian	ce with 37 CFR 3.28 and 3.31 is included.	
13. X A FIRST preliminary amendm	ent.		
A SECOND or SUBSEQUEN		MAIL CERTIFICATE	
14. A substitute specification.	I hereby c	ertify that this correspondence is being	
15. A change of power of attorney	and/or address letter. Mail Post Office to	United States Postal Service as Express Addresses (mail label	
16 X Other items or information:	EL92437251	9US in an envelope addressed to:	
Print EFS Form	U.S. Patent and Tra Box 2327, Arlington	ademark Office, P.O. n, VA 22202 on	
Intl. Prelim. EXam.	March 29, 2002		
Report		Oorothy Jenkins Berson Mailing Correspondence	
Intl. Search Report 2 references	A Name of	Consoli Manine Consolidation	
1 Drawing Sheet (Fig	gs. 1-4) Wordth	uz jennins	
1	- (Signature /	
		arch 29, 2002	
	Date of S	ignature	

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17 X The 6st	lowing fees are submitte	1	CALCULATIONS PTO USE ONLY				
BASIC NATION	AL FEE (37 CFR 1.49)						
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	onal search fee (37 CFR) onal Search Report not pro-						
		fee (37 CFR 1.482) not paid to out prepared by the EPO or JPO	890.00				
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International	preliminary examination	82)					
and all claums		PCT Article 33(1)-(4) OPRIATE BASIC FEE AI		\$ 1,040.00	T		
	0.00 for furnishing the or earliest claimed priority	ath or declaration later than	20 30	s			
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		I		
Total claims	12 -20		X \$18.00	s			
Independent claims			x 84.00	S			
MULTIPLE DEPI	ENDENT CLAIM(S) (if ap	plicable)	+ 280.00	S			
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		SUB	TOTAL =	\$ 1,040.00			
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	months from the earliest claimed priority date (37 CFR 1.492(f)). + TOTAL NATIONAL FEE =						
Fee for recording accompanied by	the enclosed assignment an appropriate cover she	ent must be	s 1,040.00 s 40.00				
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a. A check in the amount of \$1.080.00 to cover the above fees is enclosed. Check No. 8935							
b. Please charge my Deposit Account No in the amount of S to cover the above fees. A duplicate copy of this sheet is enclosed.							
c. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 15-0700. A duplicate copy of this sheet is enclosed.							
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P/1228-149

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE.

In re Patent Application of

Michael LINDEN, et al.

Date: March 29, 2002

Serial No.: not vet known

Group Art Unit: not yet known

Filed: herewith

Examiner: not yet known

For: MOTOR VEHICLE WITH A FRONT-MOUNTED ENGINE AND AIR GUIDE CHASSIS

U.S. Patent and Trademark Office

P.O. Box 2327

Arlington, VA 22202

Attn: Box PCT (US/DO/EO)

PRELIMINARY AMENDMENT

Prior to examination, please amend the application as follows.

FEE CALCULATION

NO CLAIMS

Any additional fee required has been calculated as follows:

If checked, "Small Entity" status is claimed. HIGHESTNO

	AFTER			PREVIOUSL						Α	DDIT.
	AMENDM	EN	Γ	PAID FOR		EXTRA	PRESEN	JT.	RATE		FEE
TOTAL	12	2	MINUS	20	*		0	X	(\$9 SE or \$18)	\$0	
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^{*} not less than 20 ** not less than 3 TOTAL \$0

In the event the actual fee is greater than the payment submitted or is inadvertently not enclosed or if any additional fee during the prosecution of this application is not paid, the Patent Office is authorized to charge the underpayment to Deposit Account No. 15-0700.

CONTINGENT EXTENSION REQUEST

If this communication is filed after the shortened statutory time period had elapsed and no separate Petition is enclosed, the Commissioner of Patents and Trademarks is petitioned, under 37 C.F.R. § 1.136(a), to extend the time for filing a response to the outstanding Office Action by the number of months which will avoid abandonment under 37 C.F.R. § 1.135. The fee under 37 C.F.R. § 1.17 should be charged to our Deposit Account No. 15-0700.

AMENDMENTS

- X If checked, amendments to the specification and claims are submitted herewith.
- 1. X If checked, an abstract is submitted as the last page of Appendix A.

2. Specification:

Please delete the paragraph(s)/section(s) beginning at the paragraph at page 1, line 1 to page 1, line 5; and paragraph at page 1, line 29 to page 1, line 31 and replace such paragraph(s)/section(s) pursuant to 37 C.F.R. § 1.121(b)(ii) with the "clean" version attached hereto as Appendix A. Entry is respectfully requested. A version with markings to show the changes made pursuant to 37 C.F.R. § 1.121(b)(iii) is attached hereto as Appendix B.

3. Claims:

Please cancel claims 1-10 without prejudice.

Please add new claims 11-22 pursuant to 37 C.F.R. § 1.121(c)(i) as set forth in the "clean" version attached hereto as Appendix A. Entry is respectfully requested. A version with markings to show the changes made pursuant to 37 C.F.R. § 1.121(c)(ii) is attached hereto as Appendix B.

REMARKS/ARGUMENT

The original claims have been replaced with claims in better form for U.S. practice. The original claims have not been narrowed by this Amendment, but rather have been restated in U.S. form.

The replacement claims eliminate multiple dependent claims for reducing the official filing fee.

Minor specification amendments are made.

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail Post Office to Addressee (mail label #EL924372519US) in an envelope addressed to: -U.S.

Patent & Trademark Office, P.O. Box 2327, Arlington, on March 29, 2002:
Dorothy Jenkins VA 22202,

Name of applicant, assignee or Registered Representative

Signature Signature

March 29, 2002 Date of Signature

RCF:sds/dmk/jc

Respectfully submitted,

Robert C. Faber

Registration No.: 24,322 OSTROLENK, FABER, GERB & SOFFEN, LLP

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Telephone: (212) 382-0700

APPENDIX A "CLEAN" VERSION OF EACH PARAGRAPH/SECTION/CLAIM 37 C.F.R. § 1.121(b)(ii) AND (c)(i)

SPECIFICATION:

Paragraph at page 1, line 1 to page 1, line 5:

MOTOR VEHICLE WITH A FRONT-MOUNTED ENGINE AND AIR GUIDE CHASSIS

Technical field

The invention relates to a motor vehicle with a forward-mounted engine, and a tubular chassis element for guiding air flow.

Paragraph at page 1, line 29 to page 1, line 31:

Description of the invention

This object is achieved according to the invention by a motor vehicle with an air guiding, tubular shape chassis element extending from an air inlet at the front to an air outlet at the rear, a guide arrangement around the engine for guiding air entering the air intake of the vehicle past the engine and into and though the chassis element. A vehicle component in the tubular chassis element is affected by the air flow.

CLAIMS (with indication of amended or new):

New 11. A motor vehicle comprising:

the vehicle having a front and a rear; an engine in the vehicle toward the front; a forward air intake toward the front of the vehicle;

a tubular chassis element extending longitudinally along a front to rear direction of the vehicle, the chassis element having an air inlet located toward the front of the vehicle and an air outlet located rearward of the inlet;

a guide arrangement so disposed in the vehicle and so shaped for leading air flow from the air intake into the air inlet of the chassis element and through the chassis element and the air outlet:

at least one vehicle component disposed inside the chassis element for air moving through the chassis element to the air outlet to pass the component.

- New 12. The vehicle of claim 11, wherein the engine is disposed forward of the chassis element, the guide arrangement being connected forwardly to the air intake and rearwardly to the chassis element
- New 13. The vehicle of claim 12, wherein the guide element is shaped to surround the engine.
- New 14. The motor vehicle of claim 11, further comprising a fan arrangement inside the chassis element and operable for influencing air flow through the chassis element toward the outlet
- New 15. The vehicle of claim 14, wherein the fan arrangement is located at the chassis element toward the rear of the chassis element and toward the air outlet.
- New 16. The vehicle of claim 11, further comprising a rear end plate at the rear of the chassis element, and the rear end plate providing the air outlet from the chassis element.
- New 17. The vehicle of claim 11, wherein the at least one vehicle component inside the chassis element is a component of a vehicle drive line.
- New 18. The vehicle of claim 11, wherein the vehicle component inside the chassis element is a gear box of the vehicle.
- New 19. The motor vehicle of claim 18, further comprising the vehicle having a rear axle

and the gear box being situated near to the rear axle of the vehicle.

- New 20. The vehicle of claim 13, wherein the guide arrangement further includes a bottom plate disposed under the engine.
- New 21. The vehicle of claim 20, further comprising a driver's cab having a lower portion disposed above the guide arrangement, and the guide arrangement further including the lower portion of the driver's cab of the vehicle.
- New 22. The vehicle of claim 11, further comprising a radiator for the engine and located at the engine; air vents from the vehicle disposed in the path of air from the air intake and located past the radiator, the air vents being further shaped and positioned for discharging part of the air drawn into the air take and for reducing the air supplied to the guide arrangement.

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ABSTRACT:

A motor vehicle with a forward-mounted engine and a forward-situated air intake has a tubular chassis element running in the longitudinal direction of the vehicle. Between the air intake and the chassis element there is a guide arrangement for leading air into and through the chassis element past at least one major vehicle component, advantageously the vehicle's gearbox, situated inside the chassis element. Downstream from that major vehicle component there is an air outlet.

APPENDIX B VERSION WITH MARKINGS TO SHOW CHANGES MADE 37 C.F.R. § 1.121(b)(iii) AND (c)(ii)

SPECIFICATION:

Paragraph at page 1, line 1 to page 1, line 5:

MOTOR VEHICLE WITH A FRONT-MOUNTED ENGINE AND AIR GUIDE CHASSIS

Technical field

The invention relates to a motor vehicle with a forward-mounted engine, and a tubular chassis element for guiding air flow [in accordance with the preamble to patent claim 1].

Paragraph at page 1, line 29 to page 1, line 31:

Description of the invention

This object is achieved according to the invention by [designing] a motor vehicle with an air guiding, tubular shape chassis element extending from an air inlet at the front to an air outlet at the rear, a guide arrangement around the engine for guiding air entering the air intake of the vehicle past the engine and into and though the chassis element. A vehicle component in the tubular chassis element is affected by the air flow [according to the definition in patent claim 1].

ABSTRACT:

A motor vehicle [(1)] with a forward-mounted engine [(8)] and a forward-situated air intake [(6)] has a tubular chassis element [(2)] running in the longitudinal direction of the vehicle. Between the air intake [(6)] and the chassis element [(2)] there is a guide arrangement [(11)] for leading air into and through the chassis element past at least one major vehicle component [(19)], advantageously the vehicle's gearbox, situated inside the chassis element. Downstream from that major vehicle component there is an air outlet [(12)].



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MOTOR VEHICLE WITH A FRONT-MOUNTED ENGINE

Technical field

The invention relates to a motor vehicle with a forward-mounted engine, in accordance with the preamble to patent claim 1.

State of the art

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In trucks it is usual for the engine, clutch, gearbox and other components to be situated far forward, under a driver's cab, which is often tiltable forwards to provide access. These components and the driver's cab usually have extending to the rear of them an open vehicle frame which consists of C-beams, supports rear axles and has on top of it some form of load carrier which extends sideways beyond the vehicle frame.

Such a type of vehicle frame is relatively weak flexurally and torsionally and causes limitations with regard to good running characteristics in cases where a rigid vehicle frame is desired. This type of vehicle superstructure, with an engine space which is usually open downwards, and with components situated at various points forward on the vehicle, entails relatively large flow resistance which has unfavourable effects on operational economics.

In the light of endeavours to improve the running characteristics and operational economics of vehicles, arrangements of these known kinds therefore seem less advantageous.

25 Object of the invention

The invention aims to provide an improved vehicle design which does not have the aforesaid disadvantages.

Description of the invention

30 This object is achieved according to the invention by designing a motor vehicle according to the definition in patent claim 1.

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Providing motor vehicles with a tubular chassis element which can easily be made resistant to torsion and bending makes it possible for components forming part of the vehicle's driveline to be provided with good protection by being situated inside this chassis element. Further designing the vehicle so that air is led through this chassis element by means of a guide arrangement provides components within the chassis element with necessary cooling and makes it possible for the vehicle to be provided, by means of the guide arrangement and the chassis element, with a smoother underside and hence reduced flow resistance while in motion.

10 Further advantages and features of the invention are indicated in the ensuing description and patent claims.

Description of drawing

The invention is explained in more detail below on the basis of an embodiment depicted in the attached drawing, in which:

Fig. 1 is a perspective view, partly in section, of a motor vehicle according to the invention,

Fig. 2 is a schematic horizontal section through the vehicle in Fig. 1,

20 Fig. 3 is a section III-III in Fig. 2, and

Fig. 4 is a section IV-IV in Fig. 2.

Description of a preferred embodiment

A motor vehicle 1 of the truck type depicted in Fig. 1 has, running in its longitudinal direction, a tubular chassis element 2 which is provided on each side with a number of support devices 3 which are distributed along the chassis element 2 and protrude sideways. The chassis element 2 and the support devices 3 have resting on them a load platform 4 which may possibly be provided with some form of superstructure. In front of the load platform 4 there is a driver's cab 5 which has at its front an air intake 6 which may possibly have a number of apertures in the vehicle's front.

As indicated in more detail in Fig. 2, there is behind the air intake 6 a fan 7, advantageously of radial type, which propels air radially towards a radiator 9 which

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belongs to the vehicle's engine 8, is arranged round the fan 7 and may advantageously be divided into a number of individual radiator elements. The fan 7 and the radiator 9 are dimensioned to provide good cooling of the engine 8 in a variety of operating situations. Part of the air drawn in is discharged, after passing the radiator 9, via air vents 10, e.g. one on each side of the vehicle. The remainder of the air drawn in is led partly as combustion air to the engine 8 and partly via a guide arrangement 11 past the engine 8 into the inside of the tubular chassis element 2 before finally leaving the chassis element 2 via an air outlet 12 at the latter's rear end. The air flow is represented by arrows 13.

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The guide arrangement 11 round the motor 8 includes (see Fig. 3) a lower portion 14 in the driver's cab 5, a bottom plate 15 arranged under the engine and a section 16 of the front wheel housing. These various parts are jointly designed so that air is led round the engine and rearwards to the chassis element 2. The bottom plate 15 is also intended to reduce air resistance by providing the front portion of the vehicle with a smooth underside. The engine 8 rests on beams 17 which are fastened in the forward end of the chassis element 2.

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Fig. 2 also shows that from the engine 8 a forward driveshaft 18 runs inside the chassis element 2 to a gearbox 19 which is accommodated likewise inside the chassis element 2 and is situated immediately forward of, and is connected to, a first rear axle 20. A second rear axle 21 is driven from the gearbox 19 via a rear driveshaft 22. The air which flows through the chassis element 2 cools the gearbox 19 and also other components situated in the chassis element 2, e.g. a compressor 23 for the vehicle's brake system and components for the vehicle's air conditioning system. The two rear axles 20 and 21 are supported movably in the chassis element 2 via suspension parts not further detailed here.

30 in the

The construction of the chassis element 2 executed in the form of a shell structure is indicated in more detail in Fig. 4. At mutual spacings along the chassis element 2 there are a number of rectangular ribs 25 which have panels 26 fastened round their sides so as to form a tubular space 27. At at least some of the ribs 25, support devices 3 are fastened on both sides and have side panels 28 and bottom panels 29 fastened to

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them. The underside panels 26 and 29 provide the vehicle with a smooth underside, and the side panels 28 and bottom panels 29 create enclosed spaces for various components on both sides of the chassis element 2. Advantageously, at least some of the panels, or parts of them, are detachable to provide access to components in or alongside the chassis element 2.

The air outlet 12 at the rear of the chassis element 2 may take the form of apertures in an endplate on the chassis element 2. It is possible for the chassis element 2 to contain a fan 30 to influence the air flow. One possibility is for this fan to be situated at the air outlet 12. The ribs 25 forming part of the chassis element 2, and the panels 26, are dimensioned so as to create a structure resistant to bending and torsion. This combined with advantageously designed wheel suspensions makes improved vehicle running characteristics possible. The protected space within the rigid chassis element 2 makes it possible for the gearbox to be situated close to the vehicle's powered wheels, resulting in good weight distribution, while at the same time the transmission path for large torques from the gearbox will be short and the gearbox will be in a well-protected location.

The air which flows through the chassis element 2 is normally intended for cooling various components inside the chassis element, but it is of course possible, e.g. for operation in severe cold, to lead warmer air rearwards and thereby reduce the cooling. This may be achieved, for example, by using advantageously designed air flow switching devices to cause a greater proportion of the air passing the radiator 9 to pass through the chassis element 2.

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The design of the guide arrangement 11 for the air flow rearwards round the engine 8 depends on the design of the forward portion of the vehicle and may therefore be designed otherwise than as described here.

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PATENT CLAIMS:

1. Motor vehicle which has a front-mounted engine (8) and at least one forward-situated air intake (6) and is provided with a tubular chassis element (2) running in the longitudinal direction of the vehicle, characterised in that between the air intake (6) and the chassis element (2) there is a guide arrangement (11) for leading air into and through the chassis element past at least one major vehicle component (19) arranged inside the chassis element, and that the chassis element (2) downstream from that major vehicle component (19) is provided with at least one air outlet (12).

2. Motor vehicle according to claim 1, characterised in that the engine (8) is arranged forward of the chassis element (2) and that the guide arrangement (11) surrounds the engine and is connected forwards to at least one air intake (6) and rearwards to the chassis element (2).

- Motor vehicle according to claim 1 or 2, characterised in that there is inside the chassis element (2) a fan arrangement (30) for influencing the air flow through the chassis element.
- 4. Motor vehicle according to claim 3, characterised in that the fan arrangement (30) is situated in the rear of the chassis element.
 - 5. Motor vehicle according to any one of claims 1-4, characterised in that the chassis element (2) is provided with an air outlet (12) arranged in a rear endplate.
 - 6. Motor vehicle according to any one of claims 1-5, characterised in that at least one major component (19) of the vehicle's driveline, advantageously at least the vehicle's gearbox, is situated inside the chassis element (2).
- 30 7. Motor vehicle according to claim 6, characterised in that the gearbox (19) is situated close to a rear axle (20) of the vehicle.

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- Motor vehicle according to any one of the foregoing claims, characterised in that the guide arrangement (11) includes a bottom plate (15) situated under the engine (8).
- 9. Motor vehicle according to any one of the foregoing claims, characterised in that the guide arrangement (11) includes a lower portion (14) of the driver's cab of the vehicle.
 - 10. Motor vehicle according to any one of the foregoing claims, characterised in that in the forward part of the vehicle there are air vents (10) which are designed to discharge part of the air quantity drawn into the vehicle, after it has passed the vehicle's radiator (9), and hence to limit the air quantity supplied to the guide arrangement (11).

(19) World Intellectual Property Organization International Bureau



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(81) Designated States (national): BR, JP, US.

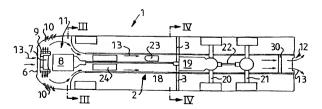
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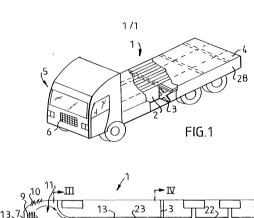
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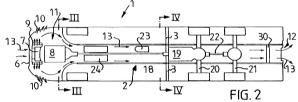
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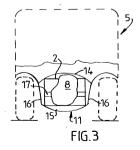
(54) Title: MOTOR VEHICLE WITH A FRONT-MOUNTED ENGINE

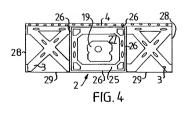


(57) Abstract: A motor vehicle (1) with a forward-mounted engine (8) and a forward-situated air intake (6) has a tubular chassis element (2) running in the longitudinal direction of the vehicle. Between the air intake (6) and the chassis element (2) there is a guide arrangement (11) for leading air into and through the chassis element past at least one major vehicle component (19), advantageously the vehicle's gearbox, situated inside the chassis element. Downstream from that major vehicle component there is an air outlet (12).









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UNITED STATES OF AMERICA COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION P/1228-149								
As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as anatod below next to my name; that I verify believe that I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are named) of the subject matter which is claimed and for which a pathent is sought on the invention entitled: Motor vehicle with a front-mounted engine								
the specification of which is attached hereto, unless the following box is checked: Solution States								
application number PCT	application number PCT/SE00/01849 and was amended on(if any).							
United States provisional application having a filing date before that of the	ose all information know under Title 35, United 8 un(s) listed below and ha he application on which	n to be material States Code §119 ave also identifie	to patentability in acco of any foreign applica d below any foreign ap	ordance wi	th Title 37, Code of Federal			
Prior Foreign or Provisional Applie	APPLICATION	NII MADED	DATE OF	FILING	PRIORITY CLAIMED			
COUNTRY		NOMBER	(day, mont	h, year)	UNDER 35 U.S.C. 119			
SWEDEN	9903518-0		29 September	er 1999				
					YESNO			
					YESNO			
I hereby claim the benefit under subject matter of each of the claim first paragraph of Title 35, United defined in Title 37, Code of Federa national or PCT international filin				ion which date of th	is material to patentability as e prior application and the			
UNITED STATES APPLICATION NUMBER		ATE OF FILING		(pa	atented, pending, abandoned)			
I hereby appoint customer no. 2352 OSTROLENK, F. BEER, GIBBO & SOFFINI, L.D.; and the members of the firm. Samuel H. Weiner Rep. No. 182 fol. Jefforms D. Berlinds - 1845, S. Sobser, G. Faber, Rep. No. 24,322. Edwards, A. Micliman - Reg. No. 24,735. Steven I. Sovern								
SEND CORRESPONDENCE TO: OSTROLENK, FABER, GERB & SOFFEN, LLP HISO AVENUE OF THE AMERICAS NEW YORK, NEW YORK 10036-8403 CUSTOMER NO. 2352 (212) 382-0700 (212) 382-0700								
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge, that willful fastements and the hists o made are punishable by fine or unprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may populate the validity of the application or any patent issued thereon.								
PULL NAME OF SOLE OR FIRST INVI MICHAEL LINDEN	ENTOR	INVENTOR'S SIG	Offenbra		March 28, 2002			
RESIDENCE (City and either State or Foreign Country) SE-152 57_Södertälje, SWEDEN SEX								
rostorfics Appress 11, SE-152 57 Södertälje, SWEDEN								
FULL NAME OF SECOND JOINT INVENTOR (# ANY) INVENTOR'S SIGNATURE DATE METCH 2								
RESIDENCE (City and either State SE-145 90 Norsborg,	RESIDENCE City and either State or Foreign Country). SE-145 90 Norsborg, SWEDEN 3 EX							
Enbyvagen 3'B, SE-145 90 Norsborg, SWEDEN								

Our ref 176-99

UNI COMBINED DECLARAT	P/1228	OFGS FILE NO. P/1228-149				
APPLICATION COUNTRY						
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				YESNO		
FULL NAME OF THIRD JOINT INVEN Ola LÖGDBERG RESIDENCE (City and either State SE-113 59 Stockholm	COUNTR SWE	March 28, 2002 COUNTRY OF CITIZENSHIP SWEDEN				
	, SE-113 59 Stockholm,	SWEDEN	l			
FULL NAME OF FOURTH JOINT INV		INVENTOR'S SIGNATURE		DATE		
RESIDENCE (City and either State	COUNTR	COUNTRY OF CITIZENSHIP				
POST OFFICE ADDRESS						
FULL NAME OF FIFTH JOINT INVENTOR, IF ANY INVENTOR'S SIGNATURE				DATE		
RESIDENCE (City and either Stat	COUNTRY OF CITIZENSHIP					
POST OFFICE ADDRESS						
PULL NAME OF SIXTH JOINT INVE	PULL NAME OF SIXTH IOINT INVENTOR, IF ANY			DATE		
RESIDENCE (City and either Stat	COUNT	RY OF CITIZENSHIP				
POST OFFICE ADDRESS						